

CLAIMS

1. A clamping apparatus for clamping work pieces, of the type comprising:

a clamping device having a box-shaped casing;

5 a work clamping member movably supported by the casing;

an electric actuator, said clamping member being operatively connected to the electric actuator to move between first and second operative positions; and

10 a power supply circuit operatively connected to a local control unit and for supplying the electric actuator with a power voltage having opposite polarities, during forward and reverse rotation of the same actuator;

15 characterised by comprising:

a manually operable control device to provide control signals to the local control unit;

20 said manually operable control device comprising electric switching means operatively connected to the local control unit programmed to selectively reverse the power voltage polarities of the electric actuator, depending on the required direction of movement for the clamping member of the clamping device.

25 2. A clamping apparatus according to claim 1, characterised in that the manual control device is

directly secured to the box-shaped casing of the clamping device.

3. A clamping apparatus according to claim 1, characterised in that the manual control device is located in a remote position and is connected by an electric cable to the local control unit inside the box-shaped casing of the clamping device.

4. A clamping apparatus according to claim 1, characterised in that the manual control device comprises a manually-operable control member for the electric switching means.

5. A clamping apparatus according to claim 4, characterised in that said manual control member consists of a control lever.

15 6. A clamping apparatus according to claim 4, characterised in that said manual control member consists of a pushbutton.

7. A clamping apparatus according to claim 1, characterised by comprising:

20 - a support block for the manually operable control device;

- a first and a second sensor means, in an open cavity of said support block; and

- manually-operable control means for selectively controlling said first and second sensor;

- said support block for the manual control device being conformed with standardised dimensions for connection to any type of the box-shaped casing of a clamping device.

5 8. A clamping apparatus according to claim 7, characterised in that said control means comprise a manually operable control member movable between a central inoperative position, and first and second operative side positions for switching said first and
10 second sensor means; and elastically biasing means, acting on both sides of the control member to return and maintain the control member in said central inoperative position.

9. A clamping apparatus according to claim 8,
15 characterised in that said elastically biasing means comprise first and second spring means on opposite sides of the control member.

10. A clamping apparatus according to claim 8,
characterised in that a rolling member is disposed
20 between each spring means, and a corresponding side of an extention of the manual control member.

11. A clamping apparatus according to claim 10,
characterised in that said extention of the manual
control member, is provided with seats for said rolling
25 member.

12. A clamping apparatus according to claim 1,
further characterised by comprising an electric
selector operatively connected to the local control
unit said local control unit being programmed to vary at
5 least one of the operative positions of work clamping
member depending on the operative position selected by
said electric selector.

13. A clamping apparatus according to claim 1,
characterised in that the local control unit comprises
10 a programmable microprocessor programmed to vary the
rotational speed of the electric actuator during the
manual operation.

14. A clamping apparatus according to claim 13,
characterised in that said microprocessor is programmed
15 to reduce the said rotational speed and the movement of
the clamping member of the clamping device.

15. A clamping according to claim 13,
characterised in that said microprocessor is programmed
to control a step-by-step said rotational speed and
20 movement of the clamping member of the clamping device.